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The impact of the Covid-19 job retention support on employment

Jaanika Meriküll [a,b,*], Alari Paulus [a]

[a] *Bank of Estonia, Estonia pst 13, 15095 Tallinn, Estonia*
[b] *University of Tartu, Narva mnt 18, 51009 Tartu, Estonia*

A B S T R A C T

The paper studies the selection into the widespread job retention support that was provided during the Covid-19 pandemic and the employment effects of it, using firm-level administrative data for Estonia that cover the whole population of firms in 2019–2020. The endogeneity of the support is addressed by creating a control group from firms that were as severely hit as those that received the support and by using matching techniques. It is found that there was no selection of firms into the support by productivity once the sample is restricted to firms that experienced similar adverse conditions. The support had a positive effect on employment, as about one job in five that was supported by the scheme was saved and the unemployment rate would have been 2–4 percentage points higher in 2020 without the support.

1. Introduction

Job retention schemes quickly became a popular policy tool for combating the adverse economic consequences of the Covid-19 pandemic. The German style of short-time work (Kurzarbeit) had proven an effective policy to counter unemployment during the Great Recession (Boeri and Bruecker, 2011; Cahuc et al., 2021; Kopp and Siegenthaler, 2021), and it inspired similar policies during the Covid-19 crisis. It has been estimated that job retention schemes were used in OECD countries ten times as much in the Covid-19 crisis as in the Great Recession (Scarpetta et al., 2020). However, there is still limited evidence about the employment effects of such support during the pandemic.

The aim of this paper is to assess how job retention affected employment during the Covid-19 pandemic. We use rich firm-level administrative data for Estonia in 2019–2020 and matching techniques to identify how the job retention support impacted jobs in the first year of the Covid-19 pandemic. Wider economic shocks tend to hit Estonia, which is a small open economy, faster and more deeply than they hit large European countries, but it also tends to recover more quickly. Before the pandemic, GDP growth and inflation in Estonia were higher and unemployment was lower than the general levels in the EU. The dynamics of the Estonian economy during the pandemic have, however, been

less drastic, and have been more similar to those in the EU than was the case in previous crises such as the Great Recession. Estonia also followed several other countries by introducing a job retention scheme and by pursuing sizable fiscal expansion overall.

We take a similar approach to that of Kopp and Siegenthaler (2021), who contrasted the firms that applied for the support but did not receive it, with those that received the support. We create the control group from firms that did not take up the support but had a similar decline in sales to those that received the support. By constructing the counterfactual from a similar subgroup of severely hit firms, we expect to identify the causal effect better than we could by constructing the counterfactual from the full sample of firms.

Our first contribution is that we extend the literature on the selection of firms to the Covid-19 job retention support. It has been shown that firm productivity is a crucial factor in how effective job retention schemes are. If low-productivity firms are more likely to receive the support, the policy is unlikely to have any long-term effect on jobs and will only postpone job destruction (Giupponi and Landais, 2022). There is inconclusive evidence about which firms were more likely to get the support during the pandemic; some studies show that the firms that did so were less productive (Harasztosi et al., 2022; Kozeniauskas et al., 2022; Morikawa, 2021), but the relationship has also been found to vary across countries (Bighelli et al., 2022).

Our second contribution is that we estimate how many jobs were saved by the job retention support in 2020. There is evidence that job retention schemes were effective at containing unemployment during the Great Recession (Boeri and Bruecker,

Table 1

Probit model for receiving the support, 2020.

Source: Authors' calculations using administrative data.

Dependent variable: 1 = obtained support in 2020, 0 = did not obtain support in 2020	Whole sample (1)	Subgroup of firms that are eligible or that received the support (2)
Relative TFP (2019)	−0.006**	−0.002
	(0.003)	(0.004)
Regional unemployment growth (2020)	0.160***	0.089**
	(0.027)	(0.042)
Log(employment) (2019)	0.080***	0.172***
	(0.002)	(0.005)
Received liquidity support (2020)	0.297***	0.274***
	(0.040)	(0.073)
Received direct subsidies (2020)	0.440***	0.409***
	(0.013)	(0.018)
Industry FE	yes	yes
N	34,626	18,803
Pseudo R^2	0.165	0.218

Note: The table reports marginal effects at mean from the probit model.

2011; Cahuc et al., 2021; Giupponi and Landais, 2022; Kopp and Siegenthaler, 2021), but not much is known about how effective such policies were in the Covid-19 pandemic. To the best of our knowledge, Bennedsen et al. (2020) provide the only firm-level estimate of the impact of job support during the pandemic to have been published so far.

We find that there was no selection of firms into the support by productivity once we restrict the sample to firms that experienced similar adverse conditions, and that the support reduced lay-offs. We estimate that about one job in five that was supported by the scheme in our private sector sample was saved, and the unemployment rate would otherwise have been 2–4 percentage points higher in 2020.

2. Data and methodology

We use Estonian administrative data from the Business Register and the Tax and Customs Board from 2019–2020, and we combine these with the data on the Covid-19 support measures in 2020 from the institutions that administrated those measures. Our sample consists of the whole population of non-financial private sector firms.

The job retention scheme accounted for roughly half of all the Covid-19 support in our sample country, and 21% of workers overall received support from the job retention scheme in 2020. We also control for the other forms of Covid-19 support received in 2020, the majority of which was liquidity aid to firms from the state-owned financial intermediation institution Kredex, while a minor share was provided as direct non-refundable aid by Enterprise Estonia. For further details about the data, see Meriküll and Paulus (2022).

To be eligible for the support, firms had to meet two of three criteria, which were a decline of at least 30% in turnover, reduced working hours for at least 30% of workers, or a decline of at least 30% in wages for at least 30% of workers, all in comparison to the same month a year earlier. The size of the benefit was initially 70% of the average monthly wage of the employee, capped at 1000 euros, and it was paid out for up to two months from March to May 2020. It was then extended for one month in June 2020 with a tighter turnover criterion of a decline of 50%, and a lower maximum amount of 800 euros. There was also a requirement for employers to contribute as well, as they additionally had to pay each worker a gross salary of at least 150 euros per month. The inclusiveness and generosity of the scheme in our sample country were similar to the average levels in other European countries (Müller and Schulten, 2020).

The actual eligibility of each firm is not observed, and so we simulate potential eligibility instead by considering firms to

Table 2

Employment growth rates in the treatment and control groups, 2020.

Source: Authors' calculations using administrative data.

	Treated	Control	Difference	Standard error
Before matching	−0.077	−0.093	0.016***	0.005
After matching	−0.077	−0.173	0.096***	0.010

be eligible if their turnover dropped by more than 30% in the first or second quarter of 2020 from what it was in the same quarter a year before. These quarterly data are available from the Tax and Customs Board register. After restricting the sample to the potentially eligible firms, we perform a matching exercise to derive the average treatment effect on the treated, using propensity score matching with the three nearest neighbors within the 1 percentage point caliper. There are still some differences between the treatment group and the control group after the sample has been restricted, but the remaining differences decline substantially after the matching; see Meriküll and Paulus (2022), Appendix B.

3. Results

We first study how the probability of receiving the job retention support depends on firm productivity prior to the pandemic, using firm-level total factor productivity (TFP) that we estimate using the method of Levinsohn and Petrin (2003). We find that low-productivity firms were more likely to get the support unconditionally, see Appendix B of Meriküll and Paulus (2022), and also after firm size and sector are controlled for, see column 1 of Table 1. The probability of a firm with TFP one unit higher, which corresponds approximately to an increase of one standard deviation in TFP, receiving the support was 0.6 percentage point lower in the whole sample.[1] However, when we leave non-eligible firms aside and consider only the firms that were potentially eligible for the support or that received it, the probability of them receiving the support no longer depends on productivity; see column 2 of Table 1. The three policy measures are also tightly related; receiving the liquidity support and direct subsidies increases the probability of receiving the job retention support.

In the next step, we estimate the effect of the support on firm employment growth using the matching technique, where the propensity score is obtained from the probit model that is reported in column 2 of Table 1. The remaining difference

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[1] TFP is measured as the difference of firm logarithmic TFP from its NACE 2-digit industry average. The average TFP is close to zero by definition and its standard deviation equaled 0.933 in 2019.

Table 3
The effects of the job retention scheme on employment.
Source: Authors' calculations using administrative data.

Group	Employment share in 2019–2020 (1)	Actual employment growth in 2020 (2)	Counterfactual employment growth in 2020 (3)	Difference from actual employment growth in 2020 (4) = (3)−(2)
All firms	1.000	−0.069	−0.121	−0.051
No eligibility & no receipt	0.501	−0.009	n/a	n/a
Treated	0.345	−0.119	−0.268	−0.149
Control	0.153	−0.156	n/a	n/a

Notes: The counterfactual growth rate for the treatment group is derived by multiplying the policy effect from Table 2, which is 2.2, by the observed growth in 2019–2020. It is assumed that non-eligible firms and the control group, which did not participate in the scheme, were unaffected by the policy.

between the employment growth rates in the treatment group and the control group after the matching is 9.6 percentage points, which is statistically significant and can be attributed to this policy; see Table 2. In other words, job losses in the treatment group would have been 2.2 times larger without the support, as employment growth would have been −0.173 instead of −0.077; the 90% confidence bounds for the estimate range from 1.8 to 2.6.

By applying this estimate to the actual employment growth, as shown in column 2 of Table 3, we can finally derive counterfactual employment growth for the treated firms; this is shown in column 3 of Table 3. This suggests that total employment in the private sector, which was 388,000 jobs in our sample, would have declined by an additional 5.1 percentage points without the policy, meaning roughly 20,000 jobs were saved by the job retention scheme. The 90% confidence bounds of this estimate are 14,000–26,000 jobs. Given that the number of jobs that were supported by the scheme in our private sector sample was 113,000, 17.7% of jobs receiving support were saved. The unemployment rate would have increased from 6.9% to 9.8% in 2020 without the support, and by 2–4 percentage points at the 90% confidence level.[2]

Estimates obtained with meticulous identification strategies range from no long-term effect on employment (Giupponi and Landais, 2022) to between one job in six (Cahuc et al., 2021) and one in three (Kopp and Siegenthaler, 2021) saved among all the participants. The effects of the Covid-19 support that were estimated on Danish data found that approximately one job in three was saved at the firms that received some form of support, and half of these can be attributed to the job retention support (Bennedsen et al., 2020). Our estimates are close to those from these studies.

A back-of-the-envelope calculation suggests that the cost of the job retention scheme in gross terms, which was 211 million euros in our sample, was only slightly higher for the government than the fiscal burden of an additional 20,000 people unemployed would have been in 2020 at about 196 million euros. This cost comes from 95 million euros of foregone revenues from income tax and social security contributions, and extra spending of 101 million euros on unemployment insurance and redundancy benefits. We therefore find, similar to Kopp and Siegenthaler (2021), that the scheme largely paid for itself. The public cost net of additional tax revenues shows unambiguously cost efficiency at 106 million euros rather than 132 million. The scheme was also highly beneficial for firms as their direct costs were 46 million euros because of the requirement to contribute, which was much less than the amount they would otherwise have paid for salaries during the mandatory notice period and redundancy compensation of about 81 million euros. For further details, see the online appendix.

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[2] Adding the point estimate gives an additional 20,000 workers laid off on top of the 48,400 who were unemployed in 2020, according to Statistics Estonia's online database (Table TT0151). The estimate would be somewhat higher when extended to workers outside our sample, though presumably not much as these are primarily public sector employees.

4. Conclusions

This paper evaluates the selection into the job retention scheme introduced in Estonia during the Covid-19 crisis and the effects of the scheme. Our results suggest that the support was an effective tool for protecting jobs during the pandemic. We find no adverse selection of low-productivity firms into the support and show that the scheme helped to reduce job destruction during the pandemic.

Data availability

The authors do not have permission to share data.

Appendix A. Supplementary data

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.econlet.2022.110963.

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